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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of

Redevelopment of Spectrum to
Encourage Innovation in the
Use of New Telecommunications
Technologies

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ET Docket No. 92-9

RM-7981

RM-8004

**COMMENTS OF
ASSOCIATED PCN COMPANY AND
ASSOCIATED COMMUNICATIONS OF LOS ANGELES**

Associated PCN Company and Associated Communications of Los Angeles ("Associated"), by their attorneys, herein submit their comments in response to the Commission's further notice of proposed rulemaking in the above-captioned docket.

Associated PCN Company ("APCN") has experimental licenses from the Commission for the purpose of testing its concepts for the implementation of PCS.¹ The concepts employ code division multiple access, highly directionalized antenna placement, and highly selected channel assignments. A 5 MHz bandwidth channelization scheme is utilized which is designed to be non-interfering with existing users in the 1850-1990 MHz band.

¹APCN's first experimental license was granted for Los Angeles (KF2XEK). APCN subsequently received experimental licenses for New York, NY (KK2XEB), Chicago, IL (KK2XEC) and Washington, D.C. (KK2XEK).

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Associated Communications of Los Angeles ("ACLA") is an alternative access provider in the Los Angeles area. ACLA utilizes microwave frequencies in certain of the bands which the FCC is now proposing to make available for relocation of incumbent 2 GHz licensees.

Associated continues to believe that the Commission's efforts to find a place to relocate incumbent 2 GHz licensees are premature and unnecessary. PCS experiments which have been conducted by APCN and other entities have shown that PCS, using spread spectrum and frequency agile techniques, can co-exist in a non-interfering environment with incumbent 2 GHz licensees even in markets as congested as Los Angeles. Indeed, spectrum sharing will have to be practiced by PCS licensees since government users, which make up a large percentage of 2 GHz users, will remain in the band. Equally as important, however, is the fact that certain of the bands which the Commission is proposing to utilize for relocation are themselves often more congested than the 2 GHz band, particularly in larger markets. The end result is that relocation would be accomplished at great difficulty and expense and may not improve the situation for anyone. Associated therefore urges the Commission to slow its rush to relocate incumbent private 2 GHz licensees in order to more fully evaluate the possibility that PCS and incumbent 2 GHz licensees can successfully co-exist in that spectrum.

**There is no Present Need to Relocate Existing
2 GHz Band Users.**

The premise of APCN's PCS experiment has been that new technologies such as PCS can be accommodated in the 2 GHz band without displacing incumbent users through the introduction and use of proven spectrum sharing techniques. APCN has demonstrated that even in the most heavily congested markets there is sufficient spectrum to fully deploy new PCS systems without relocating existing users. While others have equivocated on frequency sharing, APCN has steadfastly adhered to its original view that coexistence is possible. APCN has been conducting PCS experiments in its Los Angeles testbed since being issued its experimental authorization in December of 1990. APCN has submitted 7 quarterly reports to the Commission which detail the progress and findings of its experiments in Los Angeles.

The technology used by APCN enables a PCS system operator to avoid frequencies being used by other users and to accommodate for the frequencies used by other new licensees of the shared spectrum. APCN's technology uses a technical design that incorporates direct sequence spread spectrum, frequency agility and sophisticated frequency management.

As part of its August 13, 1991 request for a pioneer's preference, APCN submitted detailed frequency maps of the Los Angeles area which indicated the existence of sufficient available spectrum in the 1.85-1.99 GHz band to accommodate 2 PCS providers on a spectrum sharing basis without either

relocating any existing users or impairing their ability to satisfy future growth needs.

Given the cost and disruption involved in the relocation of incumbent users to new bands, Associated therefore believes that the Commission's relocation proposals are premature since it is not at all certain that relocation is necessary.

**Spectrum Sharing Will Have to be Used in the
2 GHz Band in Any Event**

The Commission's relocation proposal betrays its lack of faith in spectrum sharing as a viable option for the future in the 2 GHz band. However, Associated again reminds the Commission that the public safety users in the 2 GHz band will remain there, thus spectrum sharing techniques will have to be implemented by PCS licensees. As APCN pointed out in its comments in Gen. Docket No. 90-314, nearly 40% of the incumbent 2 GHz users in the Los Angeles area are government users.

Since PCS licensees will have to utilize spectrum sharing techniques in order to avoid interference with public safety users, the Commission should closely examine whether such techniques obviate the need for any incumbent 2 GHz user to relocate. Associated submits that APCN's experiments in Los Angeles prove that PCS and all existing 2 GHz users can co-exist in the 2 GHz band. Stated another way, once a PCS licensee implements the proper spectrum sharing technology (and the existence of government users mandates that this will occur), the added presence of private users doesn't make a significant difference.

In sum, the Commission may be engaged in an unnecessary exercise. Spectrum sharing will have to be used in order to accommodate the many government users who will remain in the 2 GHz band, and these techniques would work equally well for all existing users.

**The Bands Chosen for Relocation by the Commission
are Already Congested.**

If a relocation proves to be necessary, Associated believes that several of the new "homes" for existing users which the Commission has proposed are not satisfactory. In particular, Associated has first-hand knowledge that the 6 and 11 GHz bands are heavily congested in the larger metropolitan areas and it will prove to be exceedingly difficult for incumbent 2 GHz users to relocate in these bands.

ACLA's experience as an alternative access provider in Los Angeles is instructive. Whenever an interexchange carrier and its customer wish to contract with ACLA for a bypass of the local exchange carrier via diversity transmission technologies, a microwave route to handle the traffic must be established between the customer's location and the interexchange carrier's closest point of presence. The customers are usually high volume users which necessitates service of at least a DS-3 capacity. This means that at least 40 MHz of channelized bandwidth must be secured via the prior coordination process. ACLA utilizes the 6 GHz and 11 GHz bands for its "backbone" channels of communications. Upon receiving an order to render service, ACLA works with a frequency coordinator to determine

whether the required number of channels can be cleared ("prior coordinated"). The 11 GHz band is searched first since it is preferable for ACLA's purposes and, if insufficient channels are available, the 6 GHz band is searched. If enough channels cannot be cleared, efforts are made to purchase or otherwise obtain the needed number of channels. The congestion in the Los Angeles area is such that it takes 3 to 4 months to identify available channels. Only when the location of the channels and the route that must be taken to serve the customer has been determined can a price for the service be quoted. Sometimes there are not sufficient channels to service the route. When ACLA began this business in 1989, there were channels available. Now, less than four years later, there are virtually no channels left for expansion or additional service.

Specific examples of this congestion abound. Recently, a customer ordered service from Anaheim to a point of presence in downtown Los Angeles. The volume of service dictated a need for four microwave channels. After the lengthy coordination process in both the 11 and 6 GHz bands had been completed, only a single channel could be cleared. Similarly, there are no presently available paths in either band between Santa Monica and downtown Los Angeles. These examples demonstrate the difficulty of locating spectrum when it is needed to serve a point-to-point function. ACLA has actually had to turn away some business because of a lack of spectrum capacity. Even a small influx of 2 GHz users into these bands would be virtually

impossible to accommodate, particularly if they needed the most congested paths.

CONCLUSION

In view of the fact that the relocation of an incumbent user is undoubtedly expensive and difficult, the issues raised by relocation must be examined very carefully. This is particularly true when the new spectrum location presents severe problems to both the incumbents and new users. Associated's experience with two of the bands proposed by the Commission indicates that the Commission would be trading one set of problems for another. Associated submits that this exercise is not even necessary given its long-held belief that spectrum sharing by PCS with incumbent 2 GHz users is an eminently workable solution. Associated again urges the Commission to give spectrum sharing a chance before it embarks on a course of action which may cause more trouble than it is worth.

Respectfully submitted,

ASSOCIATED PCN COMPANY and
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